

Units

Temperature:

$$\text{Kelvin} = ^\circ\text{C} + 273$$

Pressure:

$$\text{Pascals} = \frac{\text{N}}{\text{m}^2} = \frac{\text{kg}}{\text{ms}^2}$$

Power:

$$\text{Watts} = \frac{\text{J}}{\text{s}} = \text{V} \cdot \text{A}$$

Work:

$$\text{Joules} = \text{N} \cdot \text{m}$$

Force:

$$\text{Newton} = \text{kg} \cdot \frac{\text{m}}{\text{s}^2}$$

Capacitance:

$$\text{Coulombs} = \text{A} \cdot \text{s}$$

Voltage:

$$\text{Volt} = \frac{\text{J}}{\text{C}} \text{ or } \frac{\text{J}}{\text{A} \cdot \text{s}} \text{ or } \frac{\text{N} \cdot \text{m}}{\text{A} \cdot \text{s}}$$

Frequency:

$$\text{Hertz} = \frac{1}{\text{s}}$$

Resistance:

$$\text{Ohm } (\Omega) = \frac{\text{V}}{\text{A}}$$

Charge

$$\text{Farad } (\text{F}) = \frac{\text{C}}{\text{V}} \quad \begin{matrix} (\text{Coulomb}) \\ (\text{Volt}) \end{matrix}$$

Equations

$$\text{pH} = -\log [\text{H}^+] \quad \text{pH} = \text{pKa} + \log \left[\frac{\text{A}^-}{\text{HA}} \right]$$

$$\text{fluids} = P_1 + \frac{1}{2} \rho v_1^2 + \rho g h_1 = P_2 + \frac{1}{2} \rho v_2^2 + \rho g h_2$$

$$\text{pressure} = \rho g h \quad P = \frac{F}{A}$$

$$\text{potential energy} = \text{PE} = mgh \quad \text{PE} = \frac{1}{2} C V^2$$

$$\text{energy} \quad E = \frac{hc}{\lambda} \quad E = hf \quad V = \lambda f$$

$$\text{Kinetic energy} = \text{KE} = \frac{1}{2} m v^2$$

$$\text{Ohm's Law} = V = IR$$

$$\text{Power} = W = Fd \cos \theta$$

$$\text{Electric Field} = F = Eq$$

$$\text{Work} = \text{PE} = mgh \text{ or } \Delta \text{KE} = W = \frac{1}{2} K x^2 = \frac{1}{2} m v^2$$

$$\text{flow rate} = Q = A \cdot v$$

$$\text{Boiling Point} = \Delta T = K m_i$$

$$\text{Osmotic Pressure} = \pi = i M R T$$

$$\text{G Giga} = 1 \times 10^9$$

$$\text{M Mega} = 1 \times 10^6$$

$$\text{K Kilo} = 1 \times 10^3$$

$$\text{d Deci} = 1 \times 10^{-1}$$

$$\text{c Centi} = 1 \times 10^{-2}$$

$$\text{m Milli} = 1 \times 10^{-3}$$

$$\mu \text{ Micro} = 1 \times 10^{-6}$$

$$\text{n Nano} = 1 \times 10^{-9}$$

$$\text{p Pico} = 1 \times 10^{-12}$$